

sideration; for the glenoid cavity is so shaped as to allow the lower jaw free motion in a horizontal plane, from right to left, and forwards or backwards, like the movements of a mill-stone; and, nevertheless, I venture to affirm it to be most probable, that the food of *Glossotherium* was derived from the animal and not from the vegetable kingdom; and to predict, that when the bones of the extremities shall be discovered, they will prove the Glossothere to be not an ungulate but an unguiculate quadruped, with a fore-foot endowed with the movements of pronation and supination, and armed with claws, adapted to make a breach in the strong walls of the habitations of those insect-societies, upon which there is good evidence in other parts of the present cranial fragment, that the animal, though as large as an ox, was adapted to prey.

We perceive, in the first place, looking upon the base of this portion of skull, a remarkable cavity, situated immediately behind the tympanic bone, of nearly a regular hemispherical form, an inch in diameter (fig. 2, *b*, Pl. XVI). The superficies of this cavity appears not to have been covered with articular cartilage, for it is irregularly pitted with many deep impressions; and I conclude, therefore, that it served to afford a ligamentous attachment to the styloid element of a large *os hyoides*. With this indication of the size of the skeleton of the tongue, is combined a more certain proof of the extent of its soft, and especially its muscular parts, in the magnitude of the foramen, for the passage of the lingual or motor nerve (*c*. fig. 2 and 3). This foramen, (the anterior condyloid,) in the present specimen, is the largest of those which perforate the walls of the cranium, with the exception of the foramen magnum; it is fully twice the size of that which gives passage to the second division of the fifth nerve; its area is oval, and eight lines in the long diameter, so that it readily admits the passage of the little finger.

It is only in the Ant-eaters and Pangolins that we find an approximation to these proportions of the foramen for the passage of the muscular nerve of the tongue; and the existing Myrmecophagous species even fall short of the larger fossil in this respect. Some idea of the size of the lingual nerve, and of the organ it was destined to put in motion, may be formed, when it is stated that the foramen giving passage to the corresponding nerve in the Giraffe,—the largest of the Ruminants, and having the longest and most muscular tongue in that order,—is scarcely more than one-fourth the size.

With these indications of the extraordinary development of the tongue, we are naturally led, in order to carry out a closer and more detailed comparison of the fossil in question, to that group of mammalia in which the tongue plays the chief part in the acquisition of the food. The size, form, and position of the occipital condyle,—the magnitude of the occipital foramen, (which must here have somewhat exceeded three inches in the transverse diameter,)—the slope of the occipital surface of the cranium from below, upwards and forwards, at an angle of 60°

with the base of the cranial cavity—each and all attest the close affinities of the present animal to the Edentata. More decisive evidence of the same relationship will be adduced from the organization of other parts of the cranium. The glenoid articular surface (*a*, fig. 2, Pl. XVI.) is an almost flattened plane, wider in the transverse than in the longitudinal direction; and, as in the genera *Myrmecophaga* and *Manis*, it is not defended behind by any descending process. In its general form it resembles the glenoid cavity of *Orycteropus* more than that of the preceding Edentates; but, in *Orycteropus*, the articulation is defended posteriorly by a descending process of the zygoma, and it is also situated relatively closer to the os tympanicum.

Had the *Glossotherium* teeth? The extent of the temporal muscle, which is indicated by the rugged surface of the temporal fossa, and by the well-marked boundary, formed by a slightly elevated bony ridge, which extends to near the line of the sagittal suture, together with the size of the zygomatic portion of the temporal bone, and the remains of the oblique suture by which it was articulated to the malar bone, enables me to answer this question confidently in the affirmative. They will probably be found to be molar teeth of a simple structure, as in the *Orycteropus*.

The evidence just alluded to of the existence of an os malæ is interesting, because this bone is wanting in the Pangolins; and its rudimental representative in the true Ant-eaters does not reach the zygomatic process of the temporal bone, which consequently has no articular or sutural surface at its anterior extremity. In the presence, therefore, of the surface for the junction of the os malæ, and the consequent evidence of the completion of the zygomatic arch, we learn that the Glossothere was more nearly allied to the Armadillos and *Orycterope*. That its affinity to the latter genus was closer than to the Armadillos we have most interesting evidence in the form and loose condition of the tympanic bone: it is represented of the natural size at fig. 4, Pl. XVI. Through the care and attention devoted to his specimens by their gifted discoverer, this bone was preserved *in situ*, as represented at *d*, fig. 1; but it had no osseous connection with the petrous or other elements of the temporal bone, and could be displaced and replaced with the same ease as in the *Orycterope*. This bony frame of the membrana tympani, in the Glossothere, describes rather more than a semicircle, having the horns directed upwards; it has a groove, one line in breadth, along its concave margin, for the attachment of the ear-drum, and sends down a rugged process, half an inch long, from its lower margin. In the *Dasypodes* and *Myrmecophagæ*, the tympanic bone soon becomes ankylosed with the other parts of the temporal; it is only in *Orycteropus*, among the existing insectivorous *Bruta* or *Edentata*, that it manifests throughout life the fetal condition of a distinct bony hoop, deficient at the upper part. The os tympanicum of *Orycteropus*, however, differs from that of